Supplementary Material

Fabrication of an electrochemical aptasensor for the determination of sarcosine based on synthesized $CuCo_2O_4$ nanosheets

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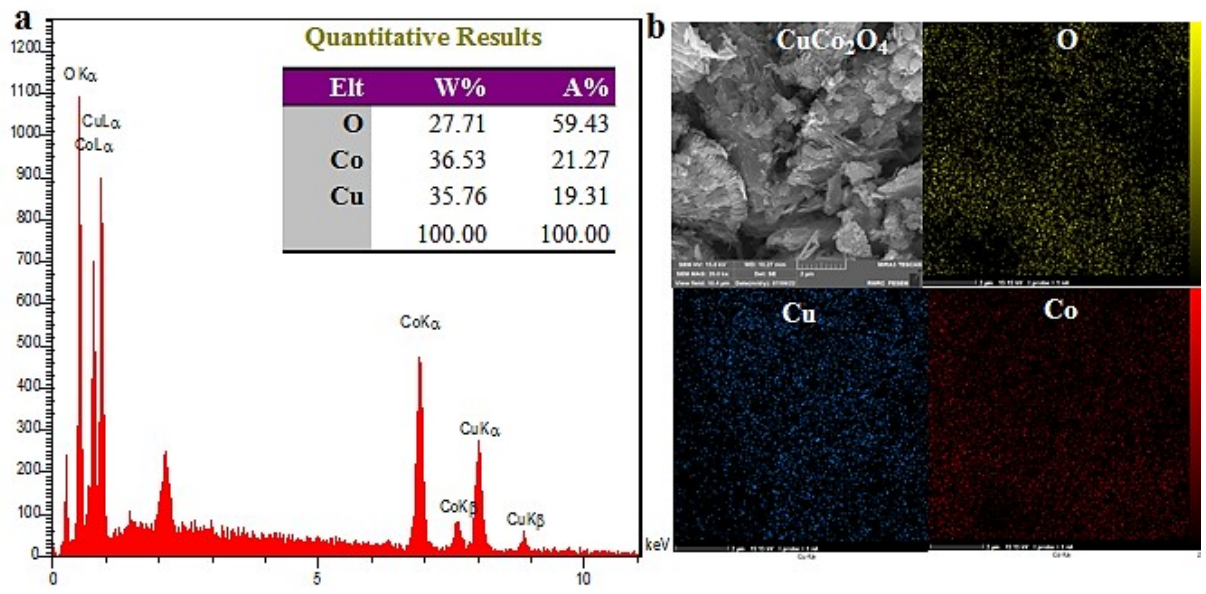

Fig. S1. (a) the EDX spectrum recorded for the synthesized $CuCo_2O_4$ NSs, and (b) EDX mapping images related to $CuCo_2O_4$ NSs

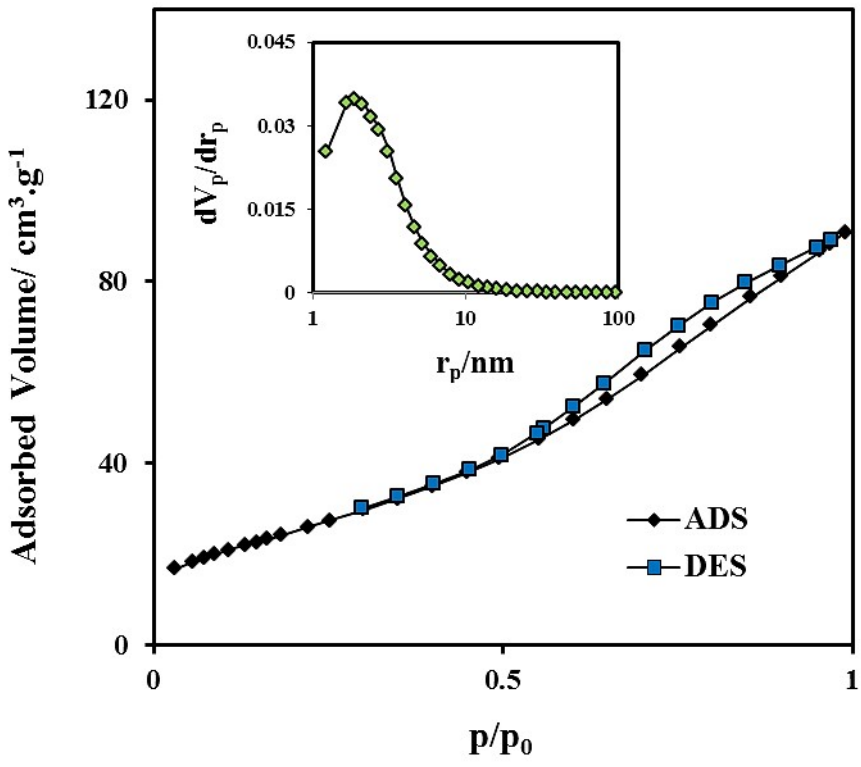

Fig. S2. The obtained N_2 adsorption-desorption isotherms of the $CuCo_2O_4$ NSs

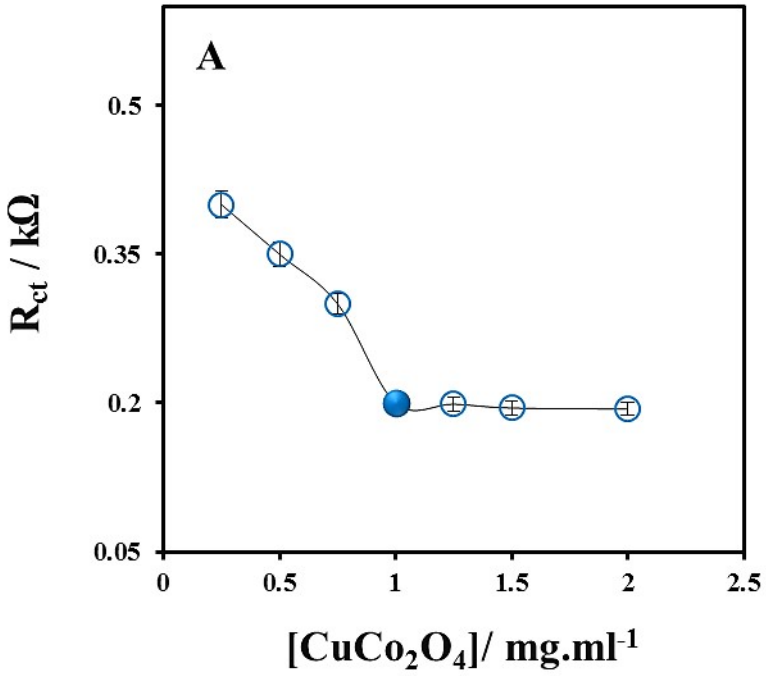

Fig. S3. A bar chart related to the results of optimizing the $CuCo_2O_4$NSs concentration in the fabrication of SRN aptasensor

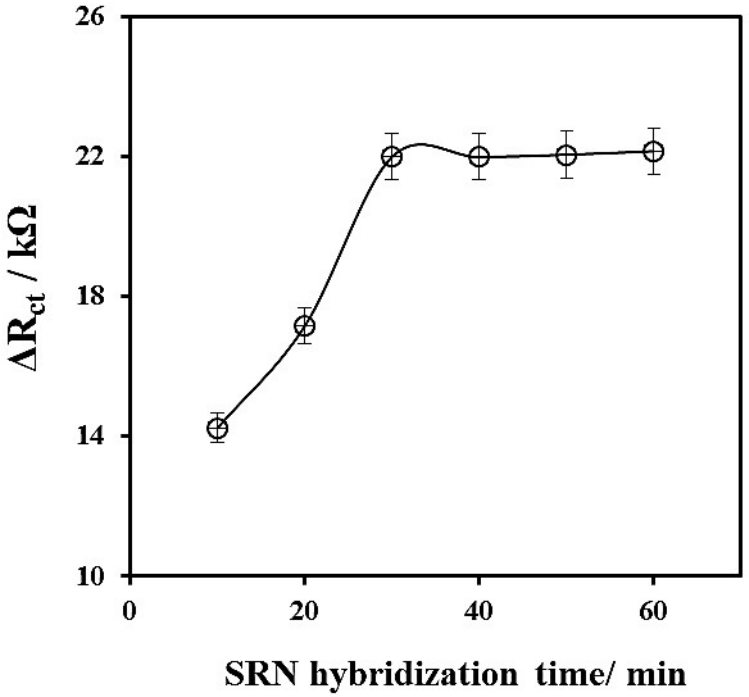

Fig. S4. The EIS response curve of the electrochemical biosensor at different times of SRN hybridization

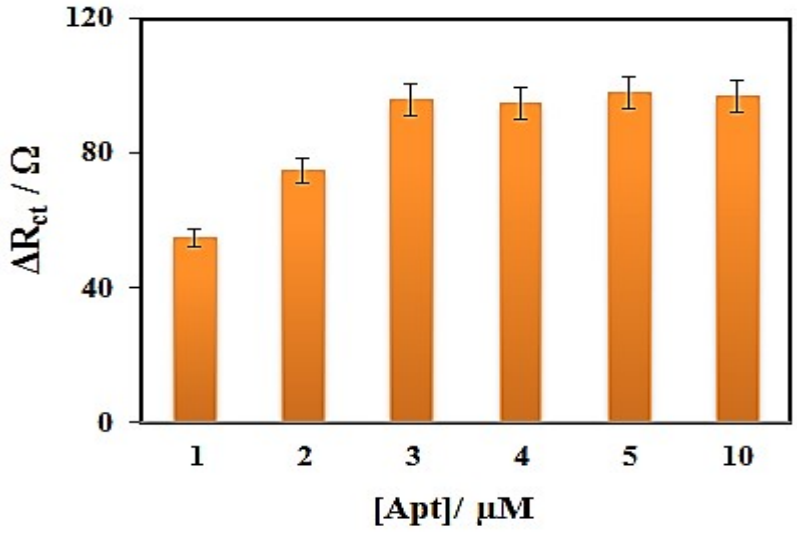

Fig. S5. Bar chart of ΔR_{ct} at different concentrations of aptamer

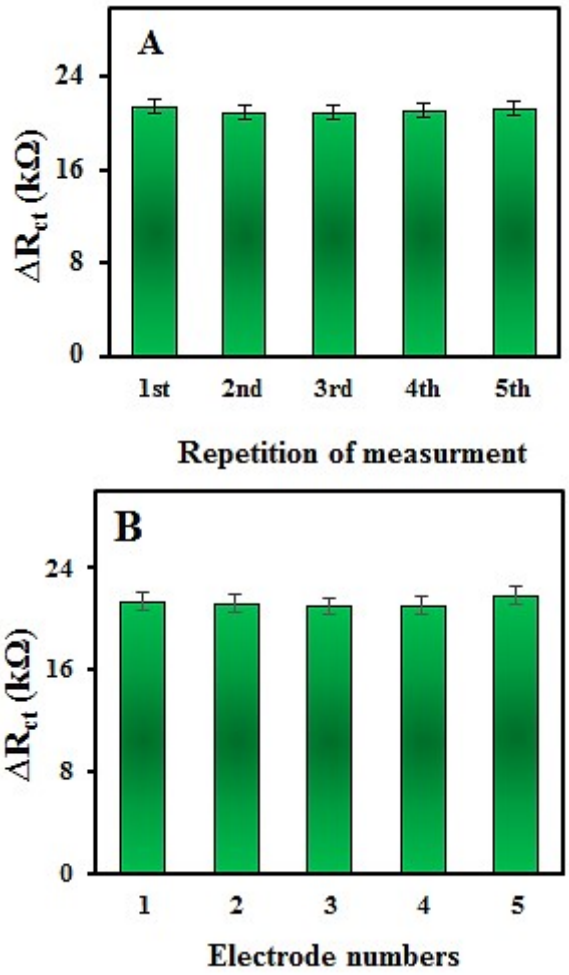

Fig. S6. (A) The resulting bar chart of the five repetitive measurements of SRN using the developed biosensor, and (B) the resulting bar chart for the EIS responses of the five developed biosensors with a same method

Table S1. A comparison of the present study with earlier electrochemical studies for SRN detection

Electrode materials	LOD	Lineraity	Refs.
Pt@ZIF8[a]/Nafion/GCE	1.06 µM	5-30 µM	1
SOx[b]/SPE[c]	16 nM	10-100 nM	2
SOx/CHIT/CuNPs/c-MWCNT/AuE[d]	0.10 pM	0.1-100 µM	3
MIP[e]/ CPE[f]	0.38 µM	5.0 µM- 1.1 mM	4
Nano anti- sarcosine antibody -GFOX [g]	3.34 pM	10 pM- 10 µM	5
Sarcosine-imprinted MIP/SPAu[h]	8.5 nM	0.011- 17.9 µM	6
Apt/ $CuCo_2O_4$/ GCE	350 fM	1pM – 8 µM	This study

[a] Nano platinum@ Zeolitic imidazolate framework-8 (ZIF8)
[b] Sarcosine oxidase
[c] Carbon screen printed electrode
[d] Sarcosine oxidase/ chitosan/ copper nanoparticles/ carboxylated multi-walled carbon nanotubes/ gold electrode
[e] Molecularly imprinted polymer (MIP)
[f] Carbon paste electrode (CPE)
[g] Graphene oxide
[h] Gold nanoparticles/ screen-printed carbon electrodes (SPCEs)

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